

wing-length 142 mm, tail-length 189 mm and weight 56.5 g, was collected from a mist-net in lowland dry forest on coral rag at Shimoni on the south Kenya coast (4°39'S., 39°23'E.). With the assistance of the Curator, it has been compared with the three specimens of *C. m. patulus* in the National Museum, Nairobi, with which it agrees perfectly. This south-eastern form occurs at lower altitudes than nominate birds (White 1965), and it may well be migratory at higher latitudes (Benson 1952). One of the Nairobi Museum specimens was captured alive at a lighted window at night at Amani in north-eastern Tanzania on 26 November 1937, only 100 km from Shimoni at 1000 m a.s.l. This apparent migrant laid an egg in captivity, though it may not perhaps have laid it at this locality under normal circumstances. In view of the lack of records of this species when it is not calling, it is noteworthy that C.F. Mann and I netted and ringed one in forest at Amani on 23 August 1973. It may be only a seasonal visitor to the Kenya coast during the austral winter, as are the Pygmy Kingfisher *Ceyx picta natalensis*, African Pitta *Pitta angolensis*, and Black Cuckoo-Shrike *Campephaga flava* (Britton 1973, Britton & Britton 1974, Britton & Rathbun in prep.).

Of all the Tanganyika-Nyasa montane birds, Moreau (1966) selected the anomalous distributions of this species and the Green-headed Oriole *Oriolus chlorocephalus* for special mention in view of the lack of records from Mt Kili-manjaro. Though unrecorded in Kenya until recently, this oriole is not uncommon in forest patches on the Shimba Hills in coastal Kenya at 400 m a.s.l., where it is probably a resident breeder (Squire 1976, R.A.M. McVicker pers. comm., pers. obs.), and it has been reported from forest at sea-level on the south Kenya coast (Squire 1976). Though typically montane, both species have been recorded in non-montane habitats below 800 m in southern Tanzania, where the cuckoo was evidently breeding between October and January (Stjernstedt 1970).

#### REFERENCES

- BENSON, C.W. 1952. Notes from Nyasaland. *Ostrich* 23: 144-149.
- BRITTON, P.L. 1973. Seasonal movements of the black-cuckoo shrikes *Campephaga phoenicea* and *C. flava*, especially in eastern Africa. *Bulletin of the British Ornithologists' Club* 93: 41-48.
- & BRITTON, H. 1974. Migratory Pygmy Kingfishers in coastal Kenya. *EAHNS Bulletin* 1974: 128.
- KEITH, S. 1968. Notes on birds of East Africa, including additions to the avifauna. *American Museum Novitates* 2321.
- SQUIRE, J. 1976. Some observations on the forests south of Mombasa. *EAHNS Bulletin* 1976: 76-77.
- STJERNSTEDT, R. 1970. Birds in *Brachystegia microphyllum* in southern Tanzania. *Bulletin of the British Ornithologists' Club* 90: 28-31.

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#### THE FOOD OF A MALACHITE KINGFISHER *ALCEDO CRISTATA* HOLDING A TERRITORY ON A FISHLESS RIVER

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It is known that the Malachite Kingfisher *Alcedo cristata* is partly insectivorous. However, previous observations have indicated that small fish and amphibians form its main diet. In 1963 I had an opportunity to note the food taken by a Malachite Kingfisher holding a territory for several weeks on a fishless river; the observation shows that survival is possible for a significant period of time when the main diet was not available.

On 12 October 1973 I located an adult Malachite Kingfisher holding a territory on the Ruiru River in an area of Kikuyu highland forest cleared for agriculture. The river was polluted by the effluents arising from the wet-processing of coffee from a factory about 4 km upstream; it was anaerobic for most of the day due to the high biochemical oxygen demand (above 100 parts per million on a five-day test of 20°C). Local villagers informed me that, as a result of the discharge of the organic effluents, shortly after the first plug of polluting wastes reached the section of the river held by the kingfisher, all the fish and tadpoles in the watercourse were observed to be in a distressed condition. I carried out a biological survey of the river on the day of my arrival, and subsequently, until the end of the year, which confirmed that the river was fishless: the macro-invertebrate fauna was severely depleted in its species-diversity and consisted almost solely of oligochaete worms, beetles (Coleoptera) and water boatmen (Hemiptera).

The stream continued to be polluted until the end of the peak coffee-picking season in early December, 1973. The Malachite Kingfisher remained in its small territory, which was probably less than 0.2 stream-km, to at least 27 November, i.e. a period of at least 47 days. Observations covering several hours per visit on five separate days in October and November showed that the bird fed solely on large water-beetles and water boatmen taken from the surface of the water, plus adult damselflies/dragonflies (Odonata) obtained by aerial feeding.

Unfortunately, as the kingfisher had not been discovered before the river became grossly polluted, it is not known whether the bird had been initially attracted to the location by the ease of capture of moribund fish, or if it had held the territory prior to the start of the discharge from the coffee factory. The significant point however, is that, although there were a number of clean tributaries with large stocks of small fish and amphibians within a radius of 7 km from the polluted sector of the main river, I did not manage to obtain any evidence that the bird ever made an attempt to leave the fishless stream. There were no Malachite Kingfishers on the adjacent rivers either.

Preliminary analysis of more detailed investigations of the ecology of Malachite Kingfishers at other locations in Kenya (Meadows in prep.), indicates that they can have a rigid social structure, and that there appears to be only a small mobile component within the local populations; the above observation is, then perhaps, not so surprising. In addition, the species is probably particularly well adapted to utilize an alternative food source during periods when its normal food cannot easily be caught; for example, I know that Malachite Kingfishers holding breeding territories on the upper reaches of the Athi River remain within their section of river even during maximum flood conditions.

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#### DRONGO *DICRURUS ADSIMILIS* USING ANIMATE PERCH

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On 10 February 1975 when near Keekorok Lodge, southern Kenya, I noticed a single Drongo *Dicrurus adsimilis* associated with a lone old male buffalo. At first, the Drongo was perched on twigs near the buffalo, and was pouncing on insects disturbed by the slowly moving mammal. After a short time it perched on the buffalo's back and made several sorties from it; that it had perched there before was evident from some small 'white-washed' spots on the buffalo's back. Despite many similar observations concerning this species and large mammals (particularly buffalo, elephant and rhino) this is the only time that I have seen a mammal used as a perch by *D. adsimilis*, nor have I ever seen any of the other seven *Dicrurus* spp. of the Ethiopian/Malagasy regions associated with mammals.

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